

WHAT IS CLAIMED IS:

1           1. A composition comprising:  
2               (a) an antigen;  
3               (b) an adjuvant;  
4               (c) at least one carrier comprising a member  
5 selected from the groups consisting of:  
6               (i) an acylated amino acid or a salt  
7 thereof;  
8               (ii) a poly amino acid comprising at least  
9 one acylated amino acid or a salt thereof;  
10              (iii) a sulfonated amino acid or a salt  
11 thereof;  
12              (iv) a poly amino acid comprising at least  
13 one sulfonated amino acid or a salt thereof; or  
14              (v) any combination thereof.

1           2. A composition as defined in claim 1, comprising  
2 a mixture.

1           3. A composition as defined in claim 1, comprising  
2 a microsphere.

1           4. A composition as defined in claim 1, wherein  
2 said antigen comprises a peptide.

1           5. A composition as defined in claim 1, wherein  
2 said adjuvant comprises a mucosal adjuvant.

1               6. A composition as defined in claim 1, wherein  
2 said carrier comprises an acylated amino acid or a salt thereof.

1               7. A composition as defined in claim 1, wherein  
2 said carrier comprises a poly amino acid comprising at least one  
3 acylated amino acid or a salt thereof.

1               8. A composition as defined in claim 1, wherein  
2 said carrier comprises a sulfonated amino acid or a salt  
3 thereof.

1               9. A composition as defined in claim 1, wherein  
2 said carrier comprises a poly amino acid comprising at least one  
3 sulfonated amino acid or a salt thereof.

1               10. A composition as defined in claim 1, wherein  
2 said carrier is selected from the group consisting of,  
3 *N*-cyclohexanoyl arginine; a mixture of *N*-cyclohexanoyltyrosine  
4 and *N*-cyclohexanoylleucine; a mixture of *N*-phenylsulfonylvaline,  
5 *N*-phenylsulfonylleucine, *N*-phenylsulfonylphenylalanine,  
6 *N*-phenylsulfonyllysine, and *N*-phenylsulfonylarginine; and a  
7 mixture of *N*-benzoylvaline, *N*-benzoylleucine, *N*-benzoylphenyl-  
8 alanine, *N*-benzoyllysine, and *N*-benzoylarginine.

1               11. A composition comprising:  
2                     (a) ovalbumin;  
3                     (b) cholera toxin; and



1           13. A composition as defined in claim 12, comprising  
2 a microsphere.

1           14. A dosage unit form comprising  
2           (A) a composition according to claim 1; and  
3           (B) (a) an excipient,  
4                   (b) a diluent,  
5                   (c) a disintegrant,  
6                   (d) a lubricant,  
7                   (e) a plasticizer,  
8                   (f) a colorant,  
9                   (g) a dosing vehicle, or  
10                  (h) any combination thereof.

1           15. A dosage unit form according to claim 14  
2 comprising a tablet, a capsule, or a liquid.

1           16. A method for administering an antigen to an  
2 animal, said method comprising orally administering a  
3 composition as defined in claim 1.

1           17. A method for immunizing chickens, said method  
2 comprising orally administering a composition as defined in  
3 claim 12.

1           18. A method for preparing a composition as defined  
2 in claim 1, said method comprising mixing an antigen, an

3 adjuvant, and a carrier comprising a member selected from the  
4 group consisting of:

- 1 (i) an acylated amino acid or a salt  
2 thereof;
- 3 (ii) a poly amino acid comprising at least  
4 one acylated amino acid or a salt thereof;
- 5 (iii) a sulfonated amino acid or a salt  
6 thereof;
- 7 (iv) a poly amino acid comprising at least  
8 one sulfonated amino acid or a salt thereof; or
- 9 (v) any combination thereof.

1 19. A method for preparing microspheres, said method  
2 comprising:

- 3 (A) solubilizing, in a solvent, at least one carrier  
4 to provide a carrier solution; and
- 5 (B) contacting said carrier solution with an  
6 antigen, an adjuvant, and a precipitator solution in which said  
7 carrier is insoluble;
- 8 wherein said carrier comprises a member selected from  
9 the groups consisting of:

- 10 (a) an acylated amino acid or a salt  
11 thereof;
- 12 (b) a poly amino acid comprising at least  
13 one acylated amino acid or a salt thereof;
- 14 (c) a sulfonated amino acid or a salt  
15 thereof;

16 (d) a poly amino acid comprising at least  
17 one sulfonated amino acid or a salt thereof; or  
18 (e) any combination thereof.

1                   20. A method as defined in claim 19, wherein said  
2 carrier solution has a pH within a first range and said  
3 precipitator solution has a pH within a second range, said first  
4 range being different than said second range.

1               21. A composition as defined in claim 12, wherein  
2 the carrier comprises a mixture of *N*-phenylsulfonylvaline, *N*-  
3 phenylsulfonylleucine, *N*-phenylsulfonylphenylalanine, *N*-phenyl-  
4 sulfonyllysine, and *N*-phenylsulfonylarginine; and a stabilizer.

1                   22. A composition as defined in claim 21, wherein  
2 said stabilizer comprises sodium 2-cyclohexylbutyrate.